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Resistance to Massive Open Online Courses (MOOCs) in the US Higher Education System

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ABSTRACT

The digital transformation, characteristic of recent decades, now pervades many aspects of everyday life, and MOOCs are an illustrative example of this process. Massive Open Online Courses are university-level courses on a specific subject delivered online via digital platforms, and the vast majority of them are free-of-charge. Initially launched with an open and collaborative intent as part of the Open Educational Resources movement, they soon turned into commercial products. MOOCs enjoyed wide coverage by the media, which were particularly enthusiastic about their potential as a cost-effective form of education reducing social inequalities in access to education. Likewise, skeptical views raised a series of concerns about the risk of creating new inequalities, further reinforcing existing ones, and eventually favoring the few to the detriment of the open and collaborative original intent. By presenting three cases of resistance to the adoption of MOOCs for academic credits that occurred at three (very) different universities in the United States, the paper sheds light on the tensions and threats generated by such digital transformations in education. The paper investigates the extent to which the introduction of such a type of digital transformation challenges the existing distribution of power among actors in the HE system; ultimately, whether this innovation further increases inequality among social groups, threatening the autonomy and quality of faculty labor. The three cases confirm the emergence of tensions i) between faculty and academic leadership in charge of the governance of HE institutions at both local and national level; ii) between the neoliberal approach of MOOCs advocates and claims of autonomy from the academic staff. At the same time, the paper highlights the success of resistance movements that may have contributed to growing disenchantment and changes in the business model of MOOCs.

Keywords

MOOCs, academic labor, digital innovation, qualitative research

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INTRODUCTION

The digital transformation characteristic of recent decades now pervades many aspects of everyday life, and education is no exception. The availability of educational resources put online by university professors since 2011, with no explicit barriers other than an internet connection, is a clear example of the extent to which digital transformation has entered the arena of education as well.

MOOCS is the acronym for Massive Open Online Courses, which are university-level courses on a specific subject, delivered online via digital platforms (the most popular ones are edX, Coursera, FutureLearn, but many others are available, with a great variance of business models), and the vast majority of them are free-of-charge (at least at basic level (Class Central 2018b).

Although not directly linked, the outburst of MOOCs (Massive Open Online Courses) shows important similarities with the phenomenon of the sharing economy (Arcidiacono, Gandini, and Pais 2018). Indeed, the origin and success of MOOCs is based on openness, collaborative learning and teaching, and accessibility as MOOCs are an instance of the Open Education Resources movement (Carfagna 2018). Moreover, as happened with many sharing economy experiences, MOOCs enjoyed great media coverage: a narrative of disruptive innovation, secular evangelism and Silicon Valley tech-positivism characterized their hype (Elisabeth Losh 2017b; Head 2017). Likewise, the digital transformation in education raises a series of concerns about the risk of creating new inequalities, further reinforcing existing ones, and eventually favoring the few (Literat 2015; Rhoads, Berdan, and Toven-Lindsey 2013; Rhoads et al. 2015) to the detriment of the open and collaborative original intent (Schor et al. 2016).

The case of MOOCs is particularly illustrative in this regard. The high and growing figures associated with MOOCs mean that they have become a ‘common event’ in the educational pathways of many different people (81 million learners all over the word registered on the 9,400 courses available from several MOOCs platforms (Class Central 2018a)). This widespread coverage makes MOOCs a socially significant phenomenon that warrants closer attention paid to its social implications, not only to the pedagogical aspects associated with the learning experience. Because they are used by millions of people every day and everywhere, MOOCs raise important ethical issues in terms of quality of education, consequences on faculty labor and business

models adopted by providers. Such important themes, however, have to date received little attention in the sociological literature.

Enthusiastic views (in particular among policy makers and academic administrators), welcomed these resources as a flexible, customized, and cost-effective form of education, opening up a series of opportunities to reduce social inequalities in access to education and furnish a solution to the trend of reducing public support for education. Skeptical views have questioned the real equalizing and empowering potential of MOOCs and pointed to several social implications at micro level (e.g. different quality levels of education available to different social groups (Rhoads, Berdan, and Toven-Lindsey 2013) as well as at macro level (e.g. consequences on the institutional configuration of HE systems (Rhoads et al. 2015) or MOOCs as a form of academic neocolonialism (Altbach 2013).

However, while a growing body of literature considers the pedagogical and psycho-social aspects of MOOCs, the least investigated aspect of MOOCs is their impact on existing actors in the organizational field (DiMaggio and Powell 1991) of higher education (hereafter HE).

This study addresses a particular period of the hype of MOOCs, between 2012 and 2013, which highlights the threat posed to the autonomy and quality of faculty labor by the neoliberal approach to MOOCs (Carfagna 2018). The risks of deskilling faculty labor and loss of intellectual property rights on course materials are critical and still current issues (Mark Lieberman 2018; Greg Toppo 2018).

By presenting three cases of resistance to the adoption of MOOCs for academic credits that occurred at three (very) different universities in the United States, the paper sheds light on the tensions and threats in terms of innovation and (in)equality generated by this example of digital transformation in education. The paper's main research questions are these: whether and how the introduction of this type of digital transformation generates (new) tensions at the macro level in the HE system; to what extent it challenges the existing distribution of power among actors in the organizational field; whether this innovation exacerbates inequality among social groups.

THEORETICAL BACKGROUND

The spread of MOOCs

The MOOC phenomenon was characterized by incredible media hype. But in less than ten years MOOCs changed from being the *tsunami* which would revolutionize higher education (Auletta 2012) and sweep away the majority of higher education institutions to being declared extinct, with scholars talking about their 'afterlives' (Elisabeth Losh 2017b) and a 'post-MOOC' age (Bennett and Kent 2017). What happened in such a short time?

This form of open and distance education was already circulating in 2008. The earliest versions of MOOCs were introduced by George Siemens and Stephen Downes at the University of Manitoba in Fall 2008. The course was called 'Connectivism and Connective Knowledge (CCK08)' (Siemens 2013). It was based on a connectivist pedagogical model centered on a collaborative and generative approach to knowledge and emphasized learner autonomy. This version of MOOCs, which has been classified by Siemens as cMOOCs, is loosely structured. It stresses the importance of sharing personal knowledge among learners, has course facilitators only, and gives the option to learners to choose the technology they prefer to use (Siemens 2013). In the following years, less interactive versions of MOOCs, which resembled the traditional university setting, started to appear in the form of xMOOC. This format was launched in Fall 2011 with the courses in Artificial Intelligence and Machine Learning designed respectively by Stanford University professors Sebastian Thrun, Daphne Koller and Andrew Ng, and was rapidly adopted by other elite US universities like MIT and Harvard. The format became the protagonist of MOOC hype in 2012, which made it the worldwide recognized format and set the standards for most of the current MOOCs. The pedagogical model underlying xMOOCs is the one of 'teacher as expert' or knowledge duplication opposed to knowledge generation as in the context of cMOOCs (Major and Blackmon 2016). xMOOCs are characterized by directed learning by an instructor, a structured organization based on weekly course topics, regular assignments which are computer-graded, and interaction in online discussion forums (Siemens 2013).

Whilst in 2011 MOOC still took the form of experiments conducted by a few pedagogical innovators, and it was estimated that worldwide they amounted to 10 (Kent and Bennett 2017), in the next year MOOC became a buzzword: 2012 was named "The year of the MOOCs" after the famous New York Times article (Pappano

2012). Thereafter, MOOCs gained a considerable number of newspapers headlines (fig.1) and were massively present in the public discourse (for example, by the end of 2013 five of the popular TED Talks hosted MOOCs' founders or CEOs, and MOOCs now had a dedicated playlist (TED 2018)).

This expansion was accompanied by a particular narrative in public discourse, a sort of 'secular evangelism' (Elisabeth Losh 2017b) and a rhetoric of disruptive innovation as being virtuous in itself (Head 2017). Many readers may remember the powerful image of the tsunami propounded by President John Hennessy of Stanford University (Auletta 2012) or Sebastian Thrun's prophecy of only ten higher education institutions surviving the revolution (Leckart 2012). This rhetoric also included altruistic claims and a positive belief in the democratizing power of MOOCs in accessing education and empowering people all around the world through education. Another key feature of the media hype was a sense of urgency and a deep trust in technology and the efficiency of engineering solutions to be applied in all domains, including social problems. Indeed, as some scholars pointed out, the MOOC oratory and rhetoric that characterized the public discourse during its hype was characterized by features of secular evangelism and digital universalism (Elisabeth Losh 2017b). The former refers to the missionary spirit of many statements about MOOCs, associated with philanthropic and charitable goals (e.g. helping people in remote rural Africa, young girls in Afghanistan, single mothers with ill children, etc.). However, such rhetoric built upon cultural stereotypes, US-exceptionalism and "confidence that those with problems do not need to be consulted about their choices among possible solutions" (Losh 2017a, p.216). The latter expression, 'digital universalism', refers to the belief that computational media technologies can solve all types of problems, including social ones. Not surprisingly, this belief that information technology can rescue people from problems of every kind accompanies MOOCs discourse, and it is a key feature of technology companies and, in general, of Silicon Valley culture, from which MOOCs originated (Elisabeth Losh 2017a; Tufekei 2018):

> "Digital universalism – or the belief that anyone can be rescued by computational media technologies - could also be said to be a feature of the rhetoric of many technology companies and of Silicon Valley culture from which many MOOCs developed." (Elisabeth Losh 2017a, 218)

The hype reached its pinnacle in 2013; thereafter it started on a downward curve (Kent and Bennett 2017). The promises and viability of MOOCs started to be questioned, some of the key actors began to acknowledge the limitations of MOOCs (e.g. S. Thrun admitting the poor results and 'lousy product' of an experimentation in MOOCs at SJSU (Chafkin 2013)) and the tone of newspaper articles became less enthusiastic. Nonetheless, the number of MOOCs continued to rise: by the end of 2013 the total number of students skyrocketed to 10 million, and 1200 courses were available (Class Central 2013).

In that year in particular, the pressure to integrate MOOCs into formal higher education reached a critical point.

Better understanding of the dynamics behind the spread of MOOCs in the USA can be gained by considering that the general context of higher education in the USA was facing several challenges. In the past fifty years the key term for most national higher educational systems had been 'expansion', in particular expanding access to socio-economic groups previously underrepresented (Schofer and Meyer 2005; Meyer et al. 1997). The centrality of knowledge and skilled labor for the competitiveness of modern economies and societies that characterized the advent of the 'knowledge society' in past decades further increased the demand for higher education (Stevens 2015; Arum and Roksa 2011). Until recently, the so-called 'fourth industrial revolution', with its stress on the centrality of technical specialization and the reskilling of workers in technological fields, has contributed to keeping high and even increasing the demand for higher education in the USA.

At the same time, this pressure has been further exacerbated by the increasing costs of college education. After 1971 the cost of college education more than doubled, and it has increased dramatically in the past ten years, even at public and lower-tier institutions (The College Board 2018) (Fig.2). This issue is associated with the problem of students' debt, which is also increasing to a dramatic extent (Fig.3). It is a serious threat to the sustainability of the system and creates generations of college graduates who enter the labor market with huge debts influencing their future transitions (NAR and ASA 2018; Federal Reserve Bank of New York 2013; Avery and Turner 2012).

Against this background, the analogy with the sharing economy and its underlying philosophy of digital universalism proves useful in explaining the factors that led to the spread of MOOCs. As happened in the sharing economy, the belief that technology could solve major social and economic problems while at the same time generating

revenues, also applied to higher education. In this perspective, technology and its advancement would contribute to a perfect market arrangement in which all actors were in a win-win situation.

For example, this is what has happened in the case of the local transportation sector (e.g. Uber): thanks to the high development of information and communication technology, it is now possible to address a market inefficiency in the local transportation sector i.e. the monopoly of taxis. The existence of a highly regulated cartel with barriers to entry reduces competition, keeps prices high, and does not incentivize quality outcomes. Introducing a technological innovation that radically changes barriers to entry and creates the conditions for more competition would (theoretically) improve the pay-offs of all players in a win-win game. The original intention was that platform-based ride services should increase the extent of potential users in terms of both passengers and drivers. They would benefit the former with affordable prices and more rides available; and the latter with income opportunities and flexibility of work. Actually, as we know, things have gone less smoothly than planned, because technology also brings about a radical re-organization of labor.

The case of MOOCs proposed for credits in academia shares some important features with the foregoing example. The premise of this analogy is the acknowledgment of a social problem: higher education faces severe and longstanding challenges which prevent the full use of the potential of young people (and adult workers) to reach a high level of qualification which would ultimately contribute to the prosperity of the production system and to the wealth and sustainability promised by the fourth industrial revolution. This problem can now be addressed with a technological solution made available by advances in information and communication technology: online education. In this (naïve) perspective, all the parties involved can increase their payoffs: people who could not afford higher education (because of cost or time constraints) can now take online courses from prestigious universities at no cost - or very low cost compared to any face-to-face option. Elite universities re-establish their dominant position in the domain of knowledge and brand themselves as helping to democratize access to higher education. Finally, education technology companies can earn profits by serving a market niche of unsatisfied demand.

The key difference in this analogy lies in the outcome: unlike several sharing economy cases, where technology and digital universalism caught everybody by surprise - in particular the groups with a stake in the field - in the case of higher education such

approach encountered a great deal of resistance. Indeed, technological innovation meant a radical reorganization of labor, for example in the local transportation sector (e.g. Uber) and in the hospitality sector (e.g. Airbnb), without meeting any particularly significant and effective resistance, at least in the USA. By contrast, the fate of digital universalism in the higher education sector went differently for several reasons. One reason concerns the particular nature of the higher education sector, which has barriers to entry difficult to overcome: transportation and hospitality workers do not have the same status within their industries as university professors do. Indeed, not everybody can be a university lecturer, because the training and accreditation process moves through numerous formal recognized steps and examinations. Another key difference with other sharing economy experiences is that in this case those who had to bear the highest consequences of the labor reorganization brought about by the introduction of technology were able to mobilize themselves as a homogenous group, and to achieve a successful outcome. They were also able to mobilize themselves because the promoters of such technological innovation in education needed university academic staff to be part of the process of implementation. Unlike in the transportation and hospitality industries, where cab drivers or hotel workers could be substituted by regular citizens with a driving license and a car, an apartment or a spare room, the provision of teaching is subject to a series of regulations. And in this respect national regulations on accreditation of teachers as well as local rules of institutional governance, e.g. the authority of faculty representative bodies over undergraduate curricula, worked in favor of a successful mobilization. Indeed, spring 2013 was characterized by an active protest movement involving several, very diverse higher education institutions, which opposed the introduction of MOOCs as substitutes for their regular courses. In that period the threat of MOOCs as an alternative to formal higher education institutions predicted by Sebastian Thrun started to take shape, right at the pinnacle of the hype. Eventually, MOOC as a substitute for formal higher education never really came about; the apocalyptic declarations about the end of traditional higher education were not fulfilled, and the number of higher education institutions, at least in the USA, is still quite stable. But this particular episode is illustrative of the tensions within organizations created by digital transformations. In the cases considered here, MOOC caused conflict between faculty and administrators and resulted in a process of mobilization which involved institutions of different nature and prestige (public and private; elite and non-elite; research and teaching oriented).

The US higher education system

HE institutions are a core component of the organizational field of MOOCs for several reasons. MOOCs were first introduced by university professors. They continue to be designed and taught by academic staff belonging to HE institutions, and they are released under the brand of such HE institutions. Second, since their inception and then during the hype, MOOCs were presented and promoted as complements to - if not substitutes for - higher education, questioning the survival of the current HE setting in the medium-long run. Thus, at the same time HE institutions are bearers and victims of the threat. This ambivalent role of MOOCs is due to the particular nature of the US HE system, which is highly stratified and diversified (van Vught 2009; Meek et al. 1996).

Indeed, the MOOC phenomenon originated from a very restricted group of highly selective elite universities, which spilled over its consequences on the lower tiers of the HE system in a top-down approach.

As noted by (Labaree 2017, 9), the American HE system is a multi-tier system which originated in response to consumer demand expressed in a very competitive market. The development of the stratified HE system has been the result of a tension between social accessibility and social exclusion which resembles the tension in American society between “democratic politics, with its willingness to constrain liberty in order to maximize social equality, and liberal markets, with its willingness to tolerate inequality in order to maximize liberty” (Labaree 2017, 5). Stratification has thus engendered a pyramid of institutions that permits exclusiveness at the top to coexist with inclusiveness at the bottom.

As a result, several types of institution make up the US HE system, of which four-year selective elite liberal arts colleges and research universities constitute the top tier. Despite attracting most scholarly attention, being considered a key benchmark for higher education worldwide, these institutions involve only a tiny minority of the overall US student population (they represent 15% of HE programs and educate less than 10% of all college students) (Scott and Kirst 2017). The vast majority of college students in the USA are accommodated by *broad access schools*. These are HE organizational forms that admit the majority of applicants to them and range from 4- to 2-year programs at public or private organizations. Although multiple ways to classify them have been recently developed (Ruef and Nag 2015), the scheme propounded in

the 1970s by the Carnegie Foundation for the Advancement of Teaching and Learning remains a commonly shared and used classification for US HE institutions. Drawing on the studies by Scott (2015) and Scott, Holzman, et al. (2017), the main types of HE institutions can be classified thus:

1. Baccalaureate colleges
2. Comprehensive colleges
3. Research universities
4. Community colleges
5. Special focus institutions
6. For-profit entities

This hierarchical and diversified system allowed including a variety of students with different backgrounds but also different ambitions and goals. A large part of the literature recognizes that the system tends to perpetuate the intergenerational transmission of inequality in access to higher education (Roksa et al. 2007). Despite affirmative actions, students from minority groups and from disadvantaged socio-economic backgrounds tend to be underrepresented at institutions at the top of the hierarchy (Roksa et al. 2007), and selection at elite universities is not fully based on merit (Stevens 2009; Stevens, Armstrong, and Arum 2008; Jaschik 2018; Hartocollis 2019). Another part of the literature also acknowledges the crucial role that such a diversified system can play in the broader context of national and regional economic development. Indeed, such a system makes it possible to educate and re-skill a large qualified workforce such as the one, for example, which is at the basis of Silicon Valley's economic success. In particular, (Scott and Kirst 2017) highlight the crucial role played by broad access schools in enabling non-traditional students to enter post-secondary education for the first time or re-enter after an interruption. Indeed, along with groundbreaking research and research-oriented human capital provided by elite research universities (e.g. Stanford University), the diversified population of broad access schools provides the basis for the qualified workforce needed to sustain the economic development of the area, at the same time providing re-skilling opportunities that respond to market needs and improve people's employment chances.

Building on this background, we will explore whether and how the introduction of this type of digital transformation in higher education challenges the existing distribution of power among actors in the organizational field and ultimately, whether this innovation further increases inequality among social groups. Indeed, If MOOCs drain an increasing number of students out of HE institutions, the number of non-permanent jobs and of new permanent ones potentially decreases in relation to lower numbers of students. Consequently, within

the faculty, those employed with non-tenured (teaching) posts may be the most harmed by the spread of MOOCs because the availability of teaching posts depends on the number of students. This negative dynamic may be even worse in low-status HE institutions, which are those more affected by the threat of MOOCs.

DATA AND METHOD

The analysis reported in the paper combined bibliographic material with qualitative empirical material collected in Fall 2017-Spring 2018 on three cases of manifest opposition to the integration of MOOCs into regular academic curricula that happened at three different HE institutions in the USA: a large public university; a large private research university; a small liberal arts college.

The construction of the case study started from a selection of articles in specialized magazines (e.g. *Inside Higher Ed*, *The Chronicle of Higher Education*) and major newspapers, like the New York Times, reporting about cases of protest or opposition against the adoption of MOOCs in the US higher education system. Further investigation of the cases also included articles from online university newspapers and publicly available documents from the selected universities' websites.

This preliminary material was supplemented by qualitative empirical material collected in 6 interviews with experts[1] conducted between November and December 2017 either face to face or at a distance through Skype and phone calls. Some of the experts were selected among faculties active in the protest movement because their names appeared in the newspaper articles selected for the case studies. These interviewees also recommended other potential interviewees (snowball sampling) who played a significant role in the process. Table 1 summarizes some of the characteristics of the interviewees, who were about evenly divided between males and females.

Table 1 List of experts interviewed

	Role	**Type of institution**
1	Tenured Professor	public, non-elite, comprehensive college (4-year)
2	Tenured Professor	
3	Tenured Professor	
4	Tenured Professor	private, élite research university
5	Tenured Professor	
6	Tenured Professor	private, élite, liberal arts college (baccalaureate college)

[1] The total number of people interviewed were 11, of which 6 are the interviews most relevant for this study.

Bibliographic sources such as academic books and scientific journal articles were used to integrate the case studies within the broader theoretical framework presented in section 2. The information gathered through bibliographic resources was used to identify key actors, their roles, supporters' and opponents' arguments, and the dynamics at work in each case study.

Qualitative interviews followed a semi-structured outline consisting of a common core of themes and a set of customized themes according to the institutional role of the interviewee. The interviewees were contacted via email, and the interview was conducted in person, by phone or Skype. All interviews were recorded and transcribed for research purposes. The analysis of qualitative material first aimed at clarifying and confirming the relationships among actors and their roles, as identified in bibliographic sources. The analysis then focused on investigating specific topics defined *a priori*: motivations, tensions among faculty members, tensions among disciplines, modes of mobilization, outcomes. Transcriptions were read and coded according to *a priori* defined themes and new ones, where available. As a final step, interviewees gave feedback on the representation of their own case in a preliminary draft of the paper, following a backtalk process (Cardano 2003).

THE THREE CASE STUDIES

In Spring 2013 a movement of opposition mounted at several universities against the adoption of MOOCs for credits in regular courses received a great deal of attention in the media. The opposition was particularly organized and successful at three institutions that differed widely as regards their origin, composition of the student body, prestige and mission but, nonetheless, reached a common outcome.

The various mobilizations took place almost at the same time, between April-May 2013. This was the tail of the MOOC-mania that spread across the country in 2012, and started to re-direct its focus on the potential of MOOCs within traditional face-to-face education. As recognized also by faculty, in that specific period "the online for-credit conversation is happening across academia" involving all HE institutions in the United States. Nonetheless, there was no coordination among the actors of the protest. Most HE institutions were under pressure from their administrations more or less at the same time, and this made the time ripe for reaction at some institutions. But the mobilization always remained local and never formalized in a broader movement.

In this section we present in detail the context in which the protest movement took place at each of the three institutions considered. Then we provide an overview of the main features and mechanisms that characterize the overall pattern of the resistance process.

Large public university

The first case is a public four-year comprehensive college enrolling about 30,000 students, belonging to the state university system. It is a non-selective institution, mainly focused on teaching, which hosts a population of students very diverse in terms of ethnic and socioeconomic background (only 17% of students are of white ethnic background and over half of incoming freshman and transfer students are first-generation college students). It is located at the heart of the South-Bay region, which hosts some of Silicon Valley's most influential businesses as well as the main law firms and venture capital firms supporting the economic success of Silicon Valley (Scott, Holzman, et al. 2017). Its location has contributed to making the university a key provider of qualified labor but at the same time a designated candidate for the experiments of some of the Silicon Valley start-ups. Indeed, the successful development of the software and technology sector in the area contributed to the university's expansion in the 1970s, in particular of the School of Engineering. Today the university is a major provider of qualified labor employed in the economy of the Valley as engineers and software programmers but also as mid-level workers in the field of marketing and management (Scott and Kirst 2017). At the same time, the university's proximity to Silicon Valley educational start-ups, its public nature and its non-selective status made it a candidate for testing the potential of MOOCs as a low-cost alternative way to reduce the cost of education. Experiments in this field were indeed backed by the positive attitude of the state governor (who encouraged an aggressive move of state universities to online education (Lewin and Markoff 2013; Young and Nesson 2014; Asimov 2018)) and by the university's president (Qayoumi and Polese 2012).

A couple of pilot projects were introduced in order to test the feasibility of integrating MOOCs for credits into the traditional curriculum of the university. The first one took place in Fall 2012 in the form of a blended course and yielded positive results: in partnership with edX, a course on 'Circuits and Electronics' was blended with lectures from the corresponding edX MOOC and class discussion with university instructors (Scott, Biag, et al. 2017). A second experiment, which received a higher degree of media coverage but achieved less positive outcomes, started in January 2013, when the university partnered with Udacity to deliver a series of remedial and introductory courses to its students and to students at a charter high

school. The courses were no longer MOOCs in the strict sense, since there were capped enrollments, courses were not free[2], students could earn credits and could interact online with the instructor. But the course was provided using the Udacity platform, and the same course was also offered as a MOOC on the platform. However, despite great expectations (Lewin and Markoff 2013) pass rates were very poor compared with face to face courses,[3] which resulted in a negative media response and the pilot program being put on hold (Woodhead et al. 2017; Lewin 2013c). A few months later, in March 2013, faculty at the Philosophy Department were asked to "pilot" the edX MOOC on 'Justice' featuring the star professor Michael Sandel from Harvard University in their regular philosophy lectures. This event ignited the mobilization process. Although university leaders assured in later news releases that there was no imposition of any sort, faculty at the philosophy department declared continuous pressure from the administration and a climate of retaliation for noncompliance and refusal (The SJSU Philosophy Department 2017). Nonetheless, the determination of the university's administration did not decrease, as it soon addressed the same request to the English Department. At this point, faculty at the Philosophy Department felt that the issue was not only a threat to the department but also involved the entire system of state universities and decided to react collectively by addressing a wider audience. The open letter was addressed to Michael Sandel and was made public through several newspapers and magazines, receiving good media coverage in April-May 2013 in national and international newspapers (Kolowich 2013; Lewin 2013b; The SJSU Philosophy Department 2017).

The letter raised three main concerns, regarding:

i) the lower pedagogical quality of the education provided in MOOCs;

ii) issues of social injustice toward students passively exposed to a lower quality product with no opportunity of interaction; toward faculty, who are downgraded to mere teaching assistants; toward the discipline, with the enforcement of one single hegemonic intellectual view on the topic, the one by the star professor and, finally,

iii) concerns about the shift in paradigm of public education from being a common good to a private enterprise.

[2] The fee for these courses was about $150, much lower than the average cost of $450-$500.

[3] According to Woodhead et al. (2017) the pass rate was 50% and 67% in Elementary Statistics and General Psychology versus a typical pass rate of 76% and 83% in face to face courses. According to Lewin (2013) only 25% of students on the Algebra course passed the exam and the percentage dropped to 12% among high school students. After these results, S. Thrun declared that Udacity was providing a "lousy product" (Chafkin 2013).

The latter is a key point of the mobilization: the letter directly addressed the threat that public education could fall into the hands of private commercial vendors, with all the associated consequences in terms of equality, freedom and transparency.
The concerns raised in the letter were shared by all faculty at the institution and the letter was endorsed by the California Faculty Association giving a broader audience and visibility to the mobilization.
The mobilization also produced a Sense of the Senate Resolution, dated November 2013, requesting the university chancellor to conduct a review of the university's governance (Academic Senate 2013). The main concerns were about the lack of transparency and communication with all the components of the university, resulting in low morale and compromising the sense of community at the institution. The President remained in office until August 2014, when he resigned to serve as a consultant for a foreign government.

Large private research university

The second case is a private, élite university. It is a general research university, with both undergraduate and graduate programs. In 2018 the university enrolled about 15,000 students, of which 45% were of Caucasian ethnic background, 10% were first-generation college students, and about 50% received some form of financial aid.[4] The university keeps its inheritance of elite liberal art college with a very low student-professor ratio (6:1) and two thirds of classes held in small groups (less than 20 students), but it has expanded into a comprehensive research university organized into 12 schools covering diverse fields of study: engineering, medicine, divinity, arts and sciences.
It was the latter, the College of Arts and Sciences, that became the main player in the MOOC case. In November 2012 the University Provost signed a commercial contract with a private company in the sector of educational technology to join the company's project called 'Semester Online'. The latter was a consortium created to launch a 3-year pilot program offering MOOCs for academic credits from prestigious universities in the USA (the consortium comprised 10 schools). According to the agreement, the university would offer its own MOOCs (in this case no longer free and developed in partnership with the company's designers) on the Semester Online platform, but each department had an opt-in/opt-out clause by which it could decide whether or not to participate. Students enrolled at any of the universities belonging to the consortium could claim academic credits for a maximum of 1

[4] University website.

course per semester and 4 courses in the entire undergraduate program. The case exploded in April 2013 because the contract, foreseeing the introduction of credit recognition through online courses provided on Semester Online, needed to be ratified by the Arts and Sciences Council (the largest faculty governing board of the university), responsible for undergraduate curricula and any teaching-related issues (Baccellieri 2013).

The debate took place on April 25, and the Council meeting was very attended. Professors had two microphones in the room, one for speakers in support of the proposal and one for those against it; all those who wanted to participate lined up behind the microphone and spoke alternately. At the end of the debate the dean of the faculty of Arts & Sciences, in favor of the agreement, summarized her standpoint, and after that the voting process took place with a secret ballot. As a result of the vote the Council rejected the contract with the private company by 16 votes against, 14 in favor and 2 abstaining, which also meant the withdrawal of the university from the consortium and the end of the partnership with the company (Lewin 2013a; Mock 2013; Baccellieri 2013; Arts & Sciences Council 2013).

The main concerns addressed by faculty in the discussion dealt with two key issues: one was procedural, about the lack of faculty consultation and transparency on the matter; the other dealt with the strategic opportuneness for a prestigious university committed to delivering high quality education as a non-profit - although private - institution to partner with a for-profit private company. Other positions questioned the prestige of other institutions in the consortium, which could have harmed the reputation of the university.

The negative reaction of the Council had a significant echo in the media. After the vote, two other partners of Semester Online program withdrew from the consortium and the whole program was definitively discontinued in Summer 2014.

The discussion about online courses for credits continued with other motions and other proposals on how to integrate internet courses for credits in the following months, but none of them eventually took place, and MOOCs provided by the university on the Coursera or edX platforms are not part of a structured plan of the university and do not grant academic credits.

Small Liberal Arts College

The third institution is an elite, private liberal arts college. It was founded in 1821 and is the third oldest HE institution in the state. It is a highly selective college, and has an outstanding reputation among the best liberal arts colleges according to the *Wall Street Journal* and *U.S. News & World Report*. Its focus is on undergraduate education only: in 2018 it counted about

1,850 students, enrolled in about 40 majors spanning across arts, humanities, natural sciences and social sciences. Because of its nature as a selective and prestigious liberal arts college, the student-to-faculty ratio is quite low (8:1). The average size of classes is 19 students and more than 80% of the classes have less than 30 students. Notwithstanding its selective nature, the college has a quite diverse student body, with 45% of students who self-define themselves as persons of color, 55% of students who receive financial aid and 11% first-generation college students.[5]

The case against MOOCs for credits took place in April 2013 when a proposal from edX to integrate their technology into the regular curriculum of undergraduate courses was submitted to the vote of the whole Faculty. The meeting that took place on 16 April 2013 foresaw the evaluation of three competing alternatives for online education and mirrored two different approaches (Rothman 2013; Chen 2013; Rivard 2013; Hashmi and Shih 2013) . A first motion, presented by a professor of political sciences, was about the approval of a partnership with edX which would have taken the form of a 5 year-pilot project. This pilot project foresaw two options: a) an entirely edX-supported MOOC model; b) a beta MOOC model. With the first former, the college would work in close partnership with edX, providing the technology and the design support for creating for courses in three years at the cost of about 2 million dollars. Learners participating in these courses would gain a certificate of completion from the college, not necessarily college credits. The latter option, the self-supported edX beta-model, would allow professors to use edX technology to provide their own courses. They would receive minimal assistance from edX on course creation, but this option did not imply paying edX for initial beta-courses and did not involve issuing certificates (but only for the first release of the course).

The alternative motion, proposed by a professor of neurosciences on behalf of a group of colleagues, foresaw that the college itself would be responsible for offering its own online courses, also starting with moving online classes and course materials already available. Professors would thus be free to decide whether and to what extent to experiment with their own way of integrating educational technology, in the spirit of freely accessible courses without any certification. On the other hand, professors would have to rely on the college infrastructure for the practical implementation of the initiative.

The first proposal, advocating a partnership with edX, received a negative response with 70 votes against it, and 36 votes in favor. Instead, the second motion, concerning the college's

[5] College website

own initiative in incorporating education technology and pursuing online education by putting course materials online, was approved with 70 in favor, 41 against and 5 abstentions.

The concerns raised by opponents of the partnership with edX involved macro-level considerations about the quality of education furnished by MOOCs and platforms like edX, and the consequences of this phenomenon on HE institutions. Concern was expressed on the risk of progressively replacing high-quality classroom experience with standardized courses delivered by superstar professors (some of the faculty explicitly referred to the case of Michael Sandel's course in Justice) to the detriment of the rest of the professoriate as a whole. This position was driven by concerns about solidarity across the profession, pointing to the risk of job losses for academics at different institutions, in particular in less prestigious institutions In this same line, opponents found disturbing the corporate approach of edX which, although being registered as non-profit company tends to adopt the market strategies of for-profit competitors (Shah 2018), together with a certain attitude of edX in branding themselves using the reputation of the partner universities.

At micro level, opponents questioned the convenience of joining such an expensive partnership for a prestigious institution like theirs. The College would have to bear the entire costs of the partnership, with the risk of undermining its reputation based on a high-quality model of education involving interactive teaching and mentoring in small groups. The idea itself of reaching thousands of learners worldwide was said not to fit the college's mission of being a small residential community, while the partner edX would have a product available for potentially infinite subsequent releases. Another key point in this regard was the issuing of certificates for the courses, which could harm the College's interests in the long run in terms of both revenues and brand inflation.

Eventually, the partnership with edX was never approved. MOOCs were eliminated from the dean's agenda and were not proposed again in the following years. In the end, MOOCs for credits never entered the curriculum of the college.

FINDINGS

Overall, the three cases confirm tension between faculty and academic leadership in charge of the governance of HE institutions at both local and national level; a tension between the neoliberal approach of MOOCs advocates and demands for autonomy advanced by the academic staff. As regards the professoriate, the three cases do not exhibit profound internal divides. Despite the persistence of different ideologies, statuses and aspirations among faculty members, the mobilization does not evince severe conflicts either among disciplines

or among academic positions. Finally, although we are not able to establish any causal link, we argue that, among other factors, the success of resistance movements contributed to the disenchantment toward MOOCs, to question their business models and to downsize their range of action.

Tension between faculty members and academic leadership

The mobilization mounted against MOOCs at the three universities analyzed, witnessed the contraposition between the academic component, faculty, and the top-level administrators, i.e. presidents, provosts and deans. Although there were supporters among faculties, the initiative of MOOCs for credits always came from the academic leadership of the institution. These initiatives were proposed through a top-down approach in which administrators advocated the introduction of MOOCs for credits, applying pressure on the faculty to adopt their plan. In two of the three cases considered, this top-down approach was exacerbated by the fact that the administrators had already signed a covert agreement with MOOC providers or educational technology companies to provide the service. Consequently, the faculty received the plans when everything had already been defined, even signed, and the faculty's only option was to ratify the contract. Indeed, faculty were consulted as a final step because the governance system of the universities required the approval of the faculty governing body for any reform or change involving the undergraduate curriculum. In another case, the plan was approved by the representative body but, according to the sources, the meeting took place in a period when most of the faculty were off-campus. Hence the faculty as a whole was informed about the plans at short notice and was confronted with an already-defined agreement presented by the administrators as the best deal, and on which the faculty representative body could only cast a positive or negative vote. The sources reported complaints about the lack of consultation and transparency with the different categories of the university and their representative bodies.

In one case the process was more inclusive, also due to the small size of the institution. Here the dean and a restricted committee (consisting of three elected representatives of faculty) drafted a plan, which went through the faculty's executive committee (The Committee of Six) and was then submitted to the vote of the faculty. Also in this case, some sources complained about continuously changing versions of the plan and the arrival of the proposals at the last minute, on the same day as the vote.

Another typical feature was the pressure and sense of urgency that surrounded the whole situation: advocates of the plans stressed the need to be the first; to chase the rhythm of

technological innovation and to surf the hype, including a certain inevitability of the diffusion of technology. An edu-specific version of M. Zuckerberg's recommendation "Move fast and break things" emerges from the following quote:

> *"'If this is disruptive it must be good'. So I think that was the main driver. So it was partly ideological, but the ideology was less political…"* [professor, large public university]

All these elements generated a widespread climate of mistrust in the top leadership, in particular at the largest universities, which widened the gap between the academic and administrative components of the university. This tension emerged clearly from several interviews:

"there was mistrust of the administration's plan that was done… and the urging of the negotiation to [name of the company] (…). Nobody had heard about it until the proposal had pretty much been signed." [professor, large private university]

"in the procedure, if you want to do something like this, you have to go to the Academic Senate and it has to be approved. But he [the President] knew that it would never happen, so he did it during winter session, when nobody was here (…). So, when faculty came back to the Senate they were furious…" [professor, large public university]

The faculty expressed concern about the connections of the top leadership with private commercial companies in the educational sector. It did so for a number of practical and ideological reasons. It was contested the conflict between the for-profit nature of the partners or the agreements (even if coming from non-profit subjects) and the view of education as a public good or at least as a non-profit domain expressed by the faculty at all institutions, including the private ones. From a general ideological opposition to such an elitist and exclusive approach to education, in a couple of cases the faculty raised serious concerns about presumed intents of privatizing education to the benefit of the few and to the detriment of the public good. The 'few' would not have been some selected students but education technology companies first, at least for-profit ones, and then administrators, who may have had some forms of private returns from the agreements. This is a serious allegation that emerges from the interviews and documents analyzed, in which faculty at large institutions

who opposed the plans were very outspoken against the dominant ideology of edu-tech companies and the risk of private returns to the detriment of the public good. This point is particularly important if we consider that two of the three institutions considered are private universities, though both of them have a non-profit nature and have public goals among their priorities.

The opposition to the ideology that characterized the MOOC hype and in general the 'secular evangelism' or the tech-universalism personified by Silicon Valley companies is very straightforward. It is based on two main points. The first argument is against the belief that technological innovation can rapidly and efficiently resolve longstanding social issues such as inequalities in education. The second is that education can be considered an industry like all the others in which market logics apply. In this framework education technology companies see themselves as able to contribute to the advancement of society while at the same time earning (high) revenues. The idea that edu-tech companies involved in these plans are gaining profit from higher education institutions, which are non-profit even in the case of the private institutions considered, is one of the major concerns.

The permeability of HE institutions to managerial logics, and in particular to competition, is not a new topic. Already in the late 1990s (Slaughter and Leslie 1999) spoke about the entrepreneurial university and the emergence of academic capitalism. (Gumport 2000) warned about the reshaping of institutional purposes of HE institutions under utilitarian principles and its consequences in terms of the emergence of competing institutional logics that conceive universities as a social institution vs. universities as an industry. Recently, (Musselin 2018) has redirected scholarly attention to the issue of competition by arguing that competition has become an institutional trait, especially for research universities, influencing their strategies and their internal governance, with the consequence – among others - of replacing collegial relationships with managerial practices. The three cases proposed in this paper show that such a tension emerged quite manifestly.

Particularly at the largest institutions, faculty contested the risk of convergence of private interests between administrators and private companies to the detriment of education as a public good. Potentially, edu-tech companies have a commercial interest in entering the market of public education; on the other side, administrators may see this as a political opportunity of visibility in several respects. For example, top administrators at public universities may have an interest in presenting the initiative to state-level administrators as a commitment to reducing the cost of education, improving education efficiency, and - last but not least - showing their determination to keep pace with innovation in the field. Similarly,

high-ranking administrators at private universities may be interested in demonstrating their engagement in the technological frontier, but also in showing to their stakeholders that they are committed to increasing revenues and reducing costs. At middle rank, Deans and faculty may have a return in visibility, for future prospects of career (e.g. toward Provosts).
Some interviewees mentioned these concerns about the transformation of the public good to the advantage of private actors:

"the worry that the faculty had on this campus was that the focus was not on education, the focus was on trying to make money and make education something that didn't need government support, either state or federal. So this was the world we were living in: we were suspicious of everything and for good reason" [professor, large public university]

"What we didn't think it was fine was sort of taking those… tools, those educational tools, and turning them into an opportunity for somebody else to make a buck…some private organizations to make a buck, and to save money here whether or not it was good for our students" [professor, large public university]

Some others highlighted the emphasis given by commercial partners to economic returns on these agreements:

"But it is always also about [name of the university] making more money!" [professor, private research university]

"why should it be so exclusive? They just want to use [college] name, because [college name] is quite famous in America, maybe not around the world, but well-known in America, as a good four-year college." [professor, small liberal arts college]

In some cases, even private returns were hypothesized, involving future steps of the career outside academia:

"they seemed to be spending a lot of time hanging out with big companies in the [Silicon] Valley and they seemed to be doing things that were more beneficial there. So one can only guess that people were also looking towards …you know… their next job paying a lot more than the job here, and anyway..." [professor, large public university]

The arguments of the opponents also involved the quality itself of the education provided through MOOCs and issues of social justice. Indeed, the quality of the type of education provided by MOOCs was accused of being inferior to that delivered face to face on campus, also in light of empirical research becoming available at that time. Moreover, faculty claimed that standardized courses like MOOCs disregard the diversity of the audience they reach and provide only one standpoint within a certain discipline. For example, faculty at the public university affirmed their commitment to delivering course content which took the diverse ethnic and socio-economic backgrounds of campus students into consideration and was customized to their specific needs. Similarly, at the private research university, where students are less diverse, issues of equality raised but from another perspective: students acquiring academic credits on Semester Online would have accessed lower quality content despite paying full tuition costs like students taking the course on campus. These concerns were expressed by faculty at both public universities:

"Professor Sandel and his students represent a certain strata of society. (…) Many of them will not know what it is like to face the issues of justice that are faced by typical students at colleges that serve students from other social contexts. Views of justice that question the establishment will not be heard or will not be heard with any vigor. Moreover, students in the flipped classrooms will see privileged college students interacting with the "real" teacher, Professor Sandel, whereas they only get to interact with other students and their "lesser" teacher at [university's name], a teacher whose own views on justice are now seen as having no importance because he or she is no longer a "content provider"" (Philosophy Department 2017, 263)

and private (although non-profit) institutions:

"what pedagogically does it mean, and also financially, to charge students and their parents and their loans….and the federal government for financial aid…to charge that kind of money but not give them the quality that they need?" [professor, private research university]

Besides the above-mentioned ideological issues opponents expressed concerns about more tangible issues as well. On one side, the perspective of adoption of MOOCs for credit

threatened the corporative interest of the faculty inasmuch it represents a threat to the number of academic posts in the future and to the maintenance of academic status. Indeed, at all of the three universities considered, faculty cited the risk of losing current and future academic posts, or even entire departments in the worst scenario, because they would no longer be needed, being substituted by video lectures. This concern was not limited to the interviewees own inner group, but also extended to faculty at other lower-tier institutions:

"Then you face the question: "…well, if universities X and Y and Z are teaching a mythology course, why does [university's name] need to teach a mythology course? And eventually, why do we need professor X teaching the course?". And if you follow that line, then eventually you can see positions and departments being eliminated because we can just rely on videos from University X or University Y." [professor, private research university]

""So the faculty members at College said: well, we are very lucky that we do not have to worry much about it, but what about our colleagues? We all know people who are professors at some *state colleges,* something like that *(…). So we said: why are they going to be destroyed by this? That didn't seem right either."* [professor, liberal arts college]

Moreover, one major concern of faculty, particularly at the state universities, was that their role would be downgraded to the status of teaching assistants to star professors. This would primarily be a loss of autonomy and status that increased the already-existing segmentation of the US higher education system. This would further exacerbate the divide between (shrinking) prestigious and protected academic careers and the growing number of temporary and precarious jobs in academia. Some quotes are particularly illustrative of the worry about the professoriate's loss of prestige and autonomy:

"why should we get a Harvard professor to give a class in Greek philosophy? (…) But the idea is…it's a real kind of…academic snobbishness. (…) Behind it all, there is the idea that…there is this sort of repository of knowledge, you know… and that they [Ivy League and the research universities] are it. They are the gatekeepers of the repository of knowledge…." [professor, public university]

Others stressed the risk of further segmenting and devaluing academic labor:

"what it looked like, was…you essentially do these lectures, you do not own them anymore, and many low level PhDs and other academics would become …they would be doing most of the labor but that labor would not be remunerated. It's like everybody will become a TA." [professor, private research university]

At private institutions some faculty were also worried about the exploitation of the brand by for-profit companies. Indeed, in the highly stratified system of HE in the USA, reputation is an important asset of HE institutions, and elite universities are well aware of the potential of their own brand. An example in this regard was provided by a professor at a private institution:

"We are clearly good for [company name], but I am not really sure that [company name] is good for us" [private research university, reported in minutes of faculty meeting]

"And there were also concern about …it seemed that the other universities in the consortium were not quite in the same league as [name of the institution]. And then [name of the institution] was acting as the principal attractive source in terms of stature or standard." [professor, private research university]

"What's the point of the brand if it is available to everyone? So, some actually made the argument of 'you reduce the value of the elite degree'." [professor, private research university]

In a couple of cases this mistrust was heightened by prior experiences in which the university's top leadership showed unclear connections with the business sector. An interviewee recalled prior audit measures in this respect:

"We were audited by the State University system and they found two things that had happened on our campus that were problematic: One was teaching regular session classes through inter-session and secondly, charging more than students were supposed to pay for these things." [professor, public university]

Faculty and mobilization

The mobilization that took place at the three institutions considered was characterized by an unexpected cohesion among all academic positions, both tenured and untenured. Indeed, we expected that the main component of the mobilization, as well as the origin of the protest, would be untenured professors (e.g. adjunct, assistant professors and other teaching positions) which would be the first to be directly affected by a substitution of face-to-face courses with MOOCs or other online sources. In fact, the sources analyzed furnish a different frame in which the engine of the mobilization were full professors, who were outspoken also on behalf of untenured colleagues who did not have the same freedom to act individually. Indeed, openly displeasing the key advocates of these initiatives, who as we have seen were generally top leaders, would have been very risky for untenured positions, which are sensitive to the evaluation of deans and other academic leaders for their renewal. There thus emerges a context of solidarity among faculty, who acted as a cohesive and homogeneous group. The explicit reason was to protect all the members of the group from retaliation by the top leadership, i.e. the Dean, the Provost or President. The risk of retaliation or punishment was a concern very apparent from the outset, also for tenured faculty, and the actors implemented various strategies to avoid it. For example, key documents concerning the protest were signed collectively. In all three cases, the main actors in the protest, the ones who initiated the process and became visible in the media were full or, in a few cases, associate professors. They explicitly stated that they had taken into consideration the instances of colleagues at lower levels of the hierarchy and spoken to protect them. This strategy emerges clearly from interviews at both public and private institutions:

"Nobody said no, and we decided to sign the letter 'The Department of Philosophy'. And we decided to do that because everybody signed it, nobody said no, and we certainly shared it very widely with everybody in the department including our graduate students who are also teaching classes for us. So everybody shared it and we decided…you know, partly we thought about protecting people from retaliation…. I said "I would be happy to sign it myself", you know, we thought it would protect people. What are they going to do to me, I am a full professor…" [professor, public university]

"we also tried to make it … you know, distributed. So that the punishment would not go on…do you see what I mean? Like…we didn't have leaders at that time. It was clear there were leaders, but there is definitely retribution. And so you don't…it was a weird thing, to try

to be effective but also to deal with …to deal with…you don't want be delegitimized or attacked …so this is the big reason why we included so many. But I think that the statement which went out loudly was very empowering for a lot… you know…for faculty at a number of schools listed in this contract, they were 'Ok, this happens at [name of university]'. I mean, it is not the same as at state schools." [professor, private research university]

"(…) it is always true that in the Faculty meetings, the tenured professors tend to be the ones that speak out most because they don't have to worry, while the untenured professors are more hesitant. So not very many of the untenured professors participated in the debate, but they did vote, the vote was secret, so they could vote. Anyways they won, and definitely the vote was strong enough that many junior professors had to be voting against joining edX." [professor, liberal arts college]

CONCLUSIONS

In this paper we have analyzed one of the few successful movements of resistance mounted against the introduction of the digital transformation and its consequences in terms of reorganization of labor. It happened in the higher education system, a particular sector characterized by unique features compared to other markets where digital innovation has radically transformed labor relationships, organizational settings, and the demand (e.g. transportation and hospitality sector).

The three case studies presented in the paper were intended to illustrate whether and to what extent the introduction of a digital transformation like MOOCs, changing the way education is produced, delivered and consumed, may have had an impact on the existing institutions, both micro and macro level. At macro level we investigated whether such digital transformation generated tensions in a HE system already highly stratified among institutions of different reputation and mission. On the micro level, the paper has analyzed whether the introduction of MOOCs challenged the existing model of governance and distribution of power among actors within each institution and, ultimately, whether this would have increased inequality among some particular social groups (e.g. tenured vs. untenured professors or across disciplines).

Overall, the three case studies analyzed share a number of features, summarized in Fig.4:

a) a contraposition between top leadership of the university (Presidents, Provosts and Deans) and the academic component of the university, the faculty. In all three cases the process was characterized by a top-down approach in which administrators advocated the

introduction of MOOCs for credits, putting pressure (although to various extents) on the faculty to adopt their plan. The faculty, in turn, opposed the administrators' proposals on the basis of several lines of argument. The main concerns centered on the entry of commercial actors and the search for profit in a field, education, traditionally considered to be a public good; concerns also dealt with the consequences in terms of reduction or devaluation of faculty positions and lack of transparency regarding the making of the contracts. However, none of the interviewees ever mentioned opposition to the use of technology in education and to opening access to educational resources as such. Faculty rejected accusations of being 'luddites': their concerns went beyond corporate self-interest, and the solidarity characterizing the mobilization traversed internal hierarchies and different types of institutions.

An important feature of the administrators' plans is that, in two out of the three cases, a MOOC provider or educational technology company had already signed a covert agreement with the university, which needed to be approved or ratified by the governing body of the academic component of the university, which is responsible for the definition of undergraduate curriculum. This contributed to the spread of a climate of mistrust. The top-down approach was accompanied by complaints about lack of consultation and transparency with the different categories of the university and their representative bodies, together with a sense of urgency that surrounded the vote. This perception was further reinforced by prior experiences that involved top administrators regarding unclear connections with the business sector.

b) In all three cases, MOOCs would have lost their constitutive characteristics of openness and 'massiveness', and would have been recognized for academic credits. The key point in all three cases was granting academic credits to these online courses, which would have been offered at a lower cost compared to that of face-to-face courses. Faculty opposing the MOOCs for credits never opposed the existence of MOOCs as such, or other online courses as complementary resources. It was the substitutive nature of these courses (with respect to traditional education) that was to be opposed as constituting a threat. The fact that academic credits from an accredited HE institution could now be gained by students through online courses, with the same status as the other regular academic credits (based on a formal process of face-to-face instruction, assessment and evaluation of competencies), was the key point of the opposition by faculty at the public and private universities considered.

This implied the risk of losing both jobs and also status. In this regard, faculty acted as a homogenous group in terms of both positions and disciplines. Tenured professors were aware of the weaknesses of untenured colleagues and were purposefully outspoken on their behalf. Moreover, there was no clear divide among disciplines in terms of support to MOOCs for credit, and the affiliation of opponents in terms of field of study was quite heterogeneous, without a clear divide between humanities and hard sciences.

c) The resistance was successful in several respects. First, the main outcome was that the plans proposed by the administrations were blocked and MOOCs for credit in the HE institutions considered never again entered the agenda. A secondary outcome concerns the career paths of those advocating MOOCs for credit: all of them moved away from their posts and only in one case was it an upward mobility. Indeed, the provost of the private research university left in August 2013; the president of the state university left the post in 2014. By contrast, at the liberal arts college considered, one of the main advocates became dean, but there were no changes in the top leadership.

Finally, we argue that the mobilization may have contributed at the macro level to the setback of MOOCs in the HE system and in the media, slowing down the spread of MOOCs, although the process may have been the result of multiple factors and we are not able to establish any causal link. The mobilization can be considered successful insofar as it produced the intended outcome locally, at the three universities. But its echo also contributed more widely, at least at national level if not internationally, to initiating a more critical discussion about MOOCs, the digital transformation in education and its social implications in general. Unlike experiences of digital transformation that occurred in other domains, like the transportation and hospitality industries (e.g. Uber, Airbnb), in the case of higher education the specific institutional and organizational configuration of the sector (including institutions and actors) contributed to a positive outcome of the processes of resistance. Indeed, the sector has important barriers of access by which university professors cannot be substituted – at least in the short term - by people external to the system, so that the implementation of the innovation itself cannot bypass university professors; rather, it needs their active collaboration. As also noted by Musselin (2018), the comparison with the sharing economy contributes to highlighting the ability of the higher education system to remain resilient in face of economic change.

The work presented here is not exempt from limitations and for the moment it cannot go beyond being exploratory. Indeed, with the data at hand we are not able to determine any causal link between the mobilization and the fate of MOOCs; moreover, due to a lack of

comprehensive data, we cannot examine how many institutions that adopted MOOCs ended up by rejecting them. However, we can still reasonably argue that the impact of the mobilization on the media and on the public discourse may have contributed to a setback in the spread of MOOCs in the USA, and may have contributed to the descending part of the MOOC media-hype which, in 2014, started to deflate. Indeed, as acknowledged by one of the advocates of MOOCs at a public university, the mobilization and its press coverage seem to have had a profound impact:

"We can only speculate about why the [University name] Plus program was terminated since [University name] Plus faculty were not debriefed about the decision. In our view there were likely three reasons why this program was abruptly discontinued: (a) low pass rates for students in the spring semester; (b) highly critical press regarding the results of the spring pilot program; and (c) pressure and media statements from [University name] faculty, including the California Faculty Association, the union to which the [University name] Plus faculty belonged." (Woodhead et al. 2017, 465).

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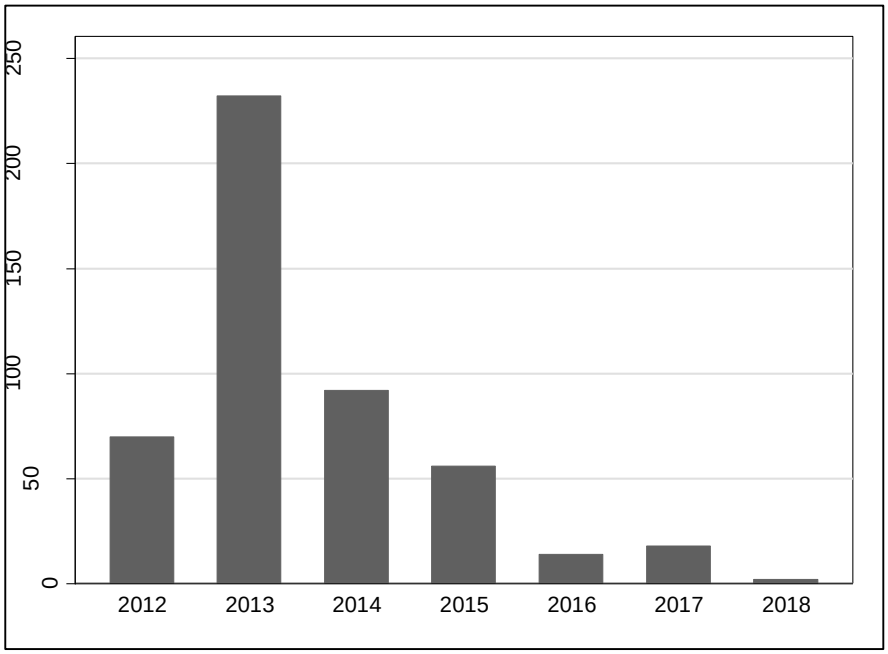
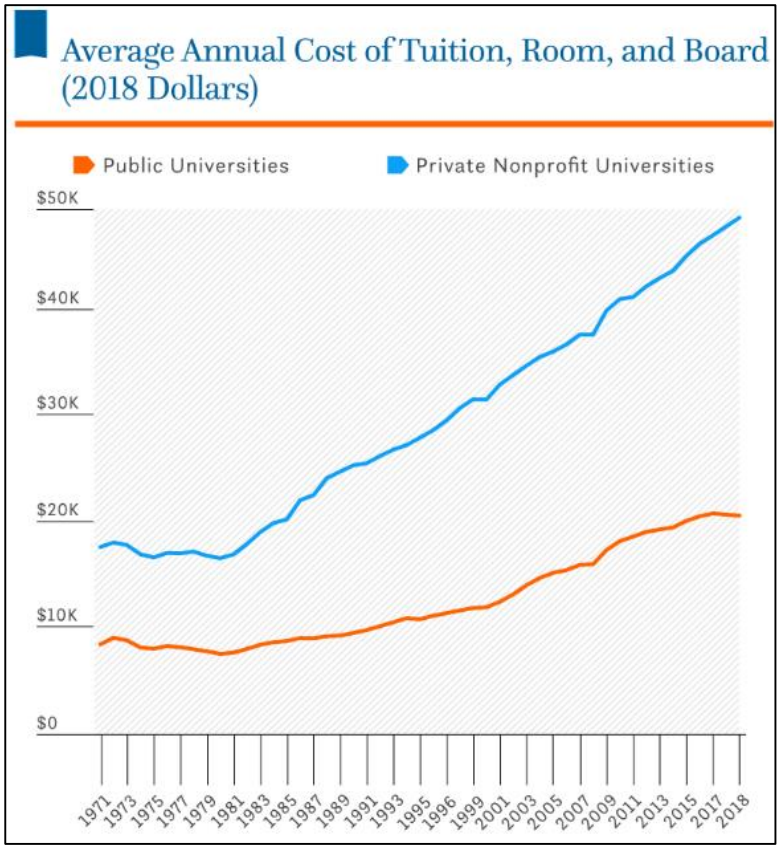
TABLES AND FIGURES

Figure 1 Number of newspaper headlines containing the word MOOC or MOOCs in the period 2012-2018



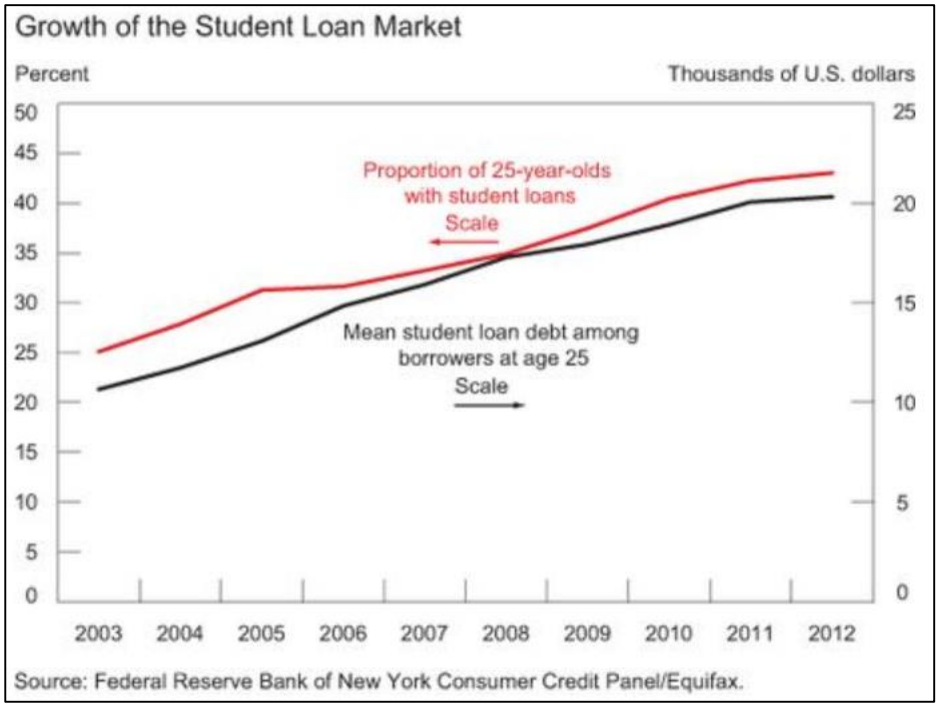
Note: figures for 2018 are updated to August 1; figures for year 2011 are equal to zero.
Source: own elaboration based on Factiva database selecting 5 major USA newspapers and 3 regional newspapers (The Wall Street Journal; The New York Times; Chicago Tribune; New York Post; Los Angeles Times; The Boston Globe; The Mercury News; San Francisco Chronicle).

Figure 2



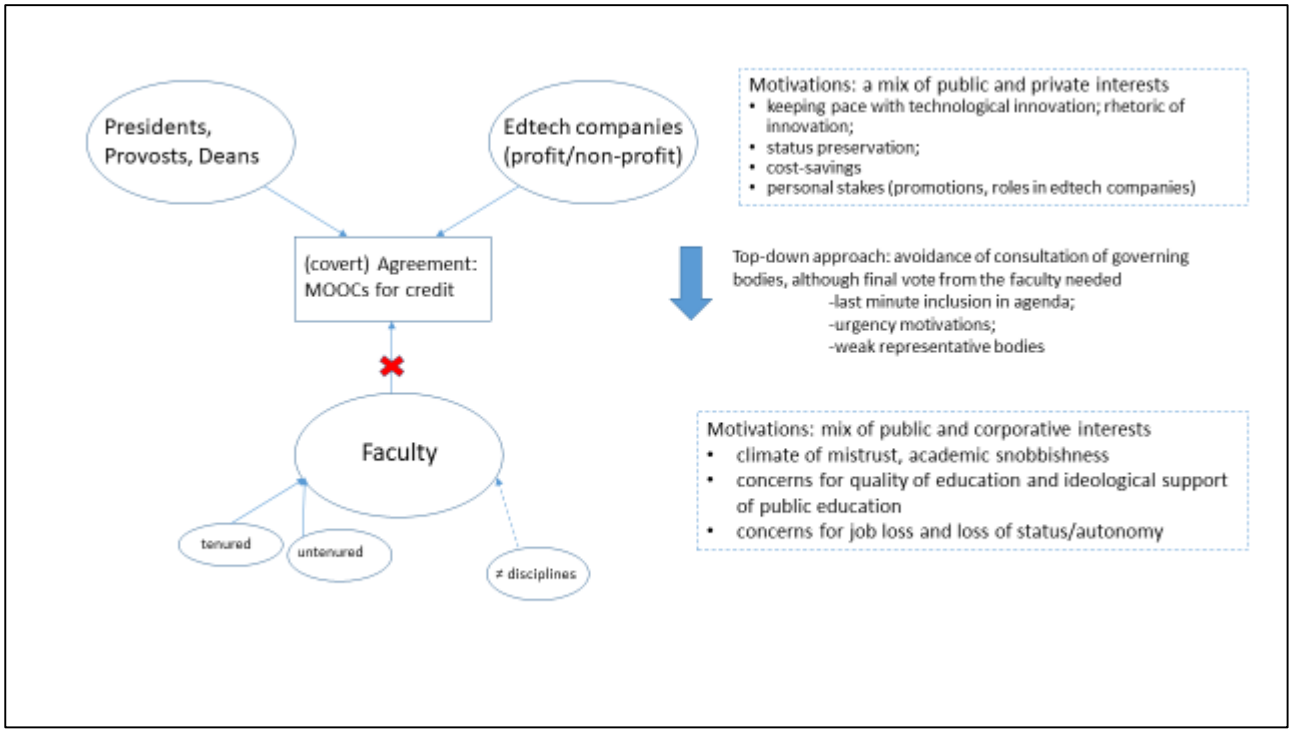
Source: The College Board

Figure 3 Growth of the Student Loan Market



Source: Federal Reserve Bank of New York Consumer Credit Panle/Equifax

Figure 4 Interpretative framework – common pattern



Source: own elaboration